UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/035,377	12/28/2001	Albert H. Chang	P01-3780	2070

22879   7590   12/21/2006
HEWLETT PACKARD COMPANY
P O BOX 272400, 3404 E. HARMONY ROAD
INTELLECTUAL PROPERTY ADMINISTRATION
FORT COLLINS, CO 80527-2400

EXAMINER
HAMZA, FARUK

ART UNIT	PAPER NUMBER
2155	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	12/21/2006	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

PTOL-90A (Rev. 10/06)

	Application No.	Applicant(s)
Office Action Summary	10/035,377	CHANG, ALBERT H.
	Examiner	Art Unit	
	Faruk Hamza	2155	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>06 October 2006</u>.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-19</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-19</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

Response to Amendment

1.   This action is responsive to the amendment filed on October 06, 2006.

Claims 1-5,7,9,10,11,13,14,17 and 18 have been amended. Claims 1-19 are

pending.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35

U.S.C. 102 that form the basis for the rejections under this section made in this

Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the
United States before the invention thereof by the applicant for patent, or on an international application
by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this
title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors

Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology

Technical Amendments Act of 2002 do not apply when the reference is a U.S.

patent resulting directly or indirectly from an international application filed before

November 29, 2000. Therefore, the prior art date of the reference is determined

under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C.

102(e)).

2.   Claims 1-19 are rejected under 35 U.S.C. 102(e) as being anticipated by

Pierre-Louis et al. (U.S. Patent Number 6,421,777) hereinafter referred as Pierre-

Louis.

Pierre-Louis teaches the invention as claimed including a method and

apparatus for booting a client data processing system from a set of boot images

stored on a server data processing system (See abstract).

As to claim 1, Pierre-Louis teaches a method of controlling a network boot

for a plurality of client devices linked to a data communications network including

a linked server and a network storage device, comprising:

receiving at the network server boot requests from one of the client

devices over the network (Column 5,lines 46-58, Pierre-Louis discloses receiving

boot request over the network);

responsive to each received boot request, selecting a target boot volume

allocated to the requesting client device from a plurality of client-specific image

copies stored at the network storage device (Column 5,lines 9-67, Pierre-Louis

discloses responding to the boot request with appropriate boot image);

responsive to each received boot request, providing communicative

access to the requesting one of the client devices to the selected target boot

volume stored at said network storage device, whereby the client is operable to

remotely boot over the network from the selected target boot volume without

downloading the selected target boot volume to local storage at the requesting

client device (Column 5,lines 9-67, Pierre-Louis discloses communicating client

with target boot volume) ; and

said requesting client device updating said allocated client-specific boot

image stored at the network storage device, by creating an image block unique to

the requesting client device whereby each of the client-specific images

comprises at least one boot image block common to all of the plurality of client

devices and at least one boot image block particular to that client device (See

abstract, Column 7, lines 21-Column 10, lines 16).

As to claim 2, Pierre-Louis teaches the method of claim 1, further including

creating a snapshot of a base boot image and creating and storing at the network

storage device, initial client-specific image copies by copying the snapshot for

each of said plurality of client devices linked to the network (Column 7, lines 21-

65).

As to claim 3, Pierre-Louis teaches the method of claim 2, wherein the

base boot image stored at the network storage device, includes an image of

operating system and application files to be initially shared among the client

devices (Column 3, lines 3-6).

As to claim 4, Pierre-Louis teaches the method of claim 2, wherein each of

the client image copies stored at the network storage device, is allocated to a

particular one of the client devices and includes common operating system (OS) and application blocks comprising a reverse snapshot of the base boot image and client-specific blocks unique to the particular one of the client devices (Column 7, lines 21-65).

As to claim 5, Pierre-Louis teaches the method of claim 4, further including receiving an update from a client device over the network and modifying the client-specific blocks stored at the network storage device and allocated to the updating client device, based on the received update in the client image copy allocated to the updating client device (Column 5, lines 26-37).

As to claim 6, Pierre-Louis teaches the method of claim 5, wherein the received update comprises a write that is processed as an allocate-on-write (Column 5, lines 26-37).

As to claim 7, Pierre-Louis teaches the method of claim 2, further including storing the snapshot of the base boot image in the network storage device and adding a new one of the client devices to the network including repeating, with the previously stored snapshot, the creating and storing at the network storage device of a client-specific image copies for the new client device (Column 12, lines 18-28; Column 7, lines 21-65).

As to claim 8, Pierre-Louis teaches the method of claim 1, wherein the network is an Internet protocol (IP) based network (Column 3, lines 8-21).

As to claim 9, Pierre-Louis teaches an external storage controller for managing network booting within a storage communication network including a linked server and a network storage device, comprising:

a snapshot manager adapted for creating a snapshot of a base boot image, for storing the base boot image in said network storage device, for creating and storing in the network storage device a reverse snapshot based on the base boot image snapshot, and for allocating a reverse snapshots to respective ones of the client devices as client-specific image copy for that client device (Column 7, lines 21-65; Column 11, lines 9-40, Pierre-Louis discloses initial boot image and client specific multiple boot images); and

said server to receive a boot request from a client device broadcast on the network and responding to each boot request by providing remote access to a client-specific image copy stored in the network storage device allocated to the requesting client device to effect a remote boot operation by the requesting client device without downloading said client-specific image copy to local storage at the requesting client device (Column 5, lines 20-67, Pierre-Louis discloses server receiving boot request and responding with client specific boot images);

said controller operating to update a client-specific image stored at said network storage device that is allocated to a particular client device by creating

and storing at the network storage device a new image block unique to that client

device based on updating information received from that client, whereby each

client specific-image stored at the network storage device comprises at least one

boot block common to a plurality of said client devices and at least one boot

block unique to that client-specific device (See abstract, Column 7, lines 21-

Column 10, lines 16).

As to claim 10, Pierre-Louis teaches the controller of claim 9, further

including means for determining based on the boot request the client-specific

image copy stored at the network storage device to be accessed by the

requesting client device (Column 11, lines 44-Column 12, lines 17).

As to claim 11, Pierre-Louis teaches the controller of claim 9, wherein the

base boot image stored at the network storage device includes an operating

system and application files image and wherein each of the client specific

reverse snapshots stored at the network storage device includes the common

operating system and application files image and the at least one boot block

image unique to that client-specific device (Column 3, lines 3-6; Column 7, lines

21-65).

As to claim 12, Pierre-Louis teaches the controller of claim 11, wherein the

client-specific information portion is alterable during operation of the controller

(Column 5, lines 27-37).

As to claim 13, Pierre-Louis teaches the controller of claim 12, wherein the snapshot manager is adapted to apply writes received from a particular client device by the input and output server as writes to the client-specific image copy stored at the network storage device, allocated to the particular client device (Column 5, lines 27-37).

As to claim 14, Pierre-Louis teaches a computer system for deploying multiple client devices communicatively linked to a network including a linked server and a network storage component, comprising:

a plurality of client components that send boot requests over the network (Fig.1; Column 2, lines 62-Column 3, lines 21; Column 5,lines 46-58, Pierre-Louis discloses plurality of clients sending boot request over the network);

a snapshot component that creates a base boot image comprising an operating system and application files image and creates client-specific image copies from the base boot image allocated to respective ones of the client components (Column 7, lines 21-65; Column 3, lines 3-6, Pierre-Louis discloses initial boot image comprising OS and application files);

said network storage component to store the client-specific image copies (Fig.1, Pierre-Louis discloses storage for storing client image); and

said server including a communication component that receives the boot

requests from the client components and in response to each boot request from

a client component provides the requesting client component with remote access

to the network storage component, to effect a remote boot from the boot image

copy allocated to the requesting client component without transferring the client-

specific image copy to local storage at the requesting client component (Column

5, lines 20-67, Pierre-Louis discloses receiving boot request and responding with

client specific image);

said server operating to update client-specific images stored at said

network storage device, by a write from a client component to create a new

client-specific image block unique to that client component, whereby each client

specific-image stored at the network storage device comprises at least one boot

block common to a plurality of said client components and at least one boot block

unique to that client-specific component (See abstract, Column 7, lines 21-

Column 10, lines 16).

As to claim 15, Pierre-Louis teaches the system of claim 14, wherein the

network is an Internet protocol (IP) based network and the client components

include initiators to encapsulate the boot requests in TCP/IP (Column 3, lines 8-

21).

As to claim 16, Pierre-Louis teaches the system of claim 14, wherein the

client components perform equivalent functions based on the operating system

and application files image (Column 7, lines 21-65).

As to claim 17, Pierre-Louis teaches the system of claim 14, wherein the

communication component further determines an allocated one of the client

image copies allocated to respective ones of the client components that

broadcast the boot requests and provides remote access by a requesting client

component only to the client-specific image stored at the network storage device,

allocated to the requesting client component (Column 7, lines 21-65).

As to claim 18, Pierre-Louis teaches the system of claim 14, wherein the

client components further transmit information update messages on the network

and the snapshot component further independently modifies the client image

copies stored at the network storage device corresponding to the transmitting

ones of the client components, whereby each modified one of the client image

copies differs from other ones of the client image copies (Column 7, lines 21-65;

Column 8, lines 38-46).

As to claim 19, Pierre-Louis teaches the system of claim 18, wherein the

network storage component includes for each client component a storage area

for storing information from the base boot image common to said plurality of

client components and a storage area for storing information from the information

update messages received from that particular client component (Column 7, lines

21-65).

3.   **Examiner's Note:** Examiner has cited particular columns and line

numbers in the references as applied to the claims above for the convenience of

the applicant. Although the specified citations are representative of the teachings

of the art and are applied to the specific limitations within the individual claim,

other passages and figures may apply as well. It is respectfully requested from

the applicant in preparing responses, to fully consider the references in its

entirety as potentially teaching of all or part of the claimed invention, as well as

the context.

Response to Arguments

4.   Applicant's arguments have been fully considered but they are not

persuasive.

              In the remarks applicant argues in substance that; A) Pierre-Louis does

not teach receiving target boot volume stored at the network storage device

without downloading the target volume to local storage at the requesting device

in response to each boot request.

              In response to A) Pierre-Louis teaches monitoring state of client process

system. Responsive to an indication that the client data processing system needs

to be rebooted; a new boot image is selected, if needed depending on the state, and sent to the client data processing system (See abstract, Column 7, lines 21- Column 10, lines 16). Pierre-Louis also teaches remote boot of client system using image stored on the server (See Fig. 5A, 514; Column 10, lines 31-46). Therefore, teaching of Pierre-Louis meets the claimed limitation of booting client from a boot image stored on the server.

Conclusion

5.   Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

6.   Any inquiry concerning this communication or earlier communications from

the examiner should be directed to Faruk Hamza whose telephone number is

571-272-7969. The examiner can normally be reached on Monday through

Friday.

          If attempts to reach the examiner by telephone are unsuccessful, the

examiner's supervisor, Saleh Najjar can be reached at 571-272-4006. The fax

phone number for the organization where this application or proceeding is

assigned is 571-273-8300.

          Information regarding the status of an application may be obtained from

the Patent Application Information Retrieval (PAIR) system. Status information

for unpublished applications is available through Private PAIR only. For more

information about the PAIR system, see http://pair-direct.uspto.gov. Should you

have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 886-217-9197 (toll –free).

Faruk Hamza

Patent Examiner

Group Art Unite 2155
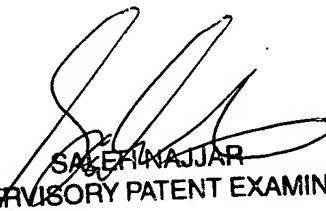
SUPERVISORY PATENT EXAMINER